



## Nations Gather To Help Nuclear Cities Shut Down Remaining Plutonium Production Reactors

The permanent closure of Russian nuclear reactors built specifically to produce plutonium for nuclear weapons is a major focus for NNSA Principal Deputy Administrator Jerry Paul, who recently represented NNSA at a meeting in Switzerland that brought together representatives from 11 countries and two international organizations. The conference considered the challenge of shutting down the last three remaining plutonium production reactors in the Russian Federation,

launching a process for international participation in funding the effort.

“This conference is an historic call to action for the international community to support our collective global nonproliferation objectives,” Paul said. “The Elimination of Weapons Grade Plutonium Production (EWGPP) Program continues to work hard with its Russian counterparts to reduce the amount of nuclear materials available to terrorists. Continued funding and support will be critical to

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## New IT Chief Has Wealth of Experience

Dr. Linda Wilbanks has been the NNSA chief information officer (CIO) since Halloween 2004, and when people ask her if her new role has been a trick or a treat. Without hesitation, she replies treat. CIO has the responsibility of Information technology (IT) for NNSA. The NNSA CIO’s main goal is to support NNSA and its mission.

Though new to NNSA, Dr. Wilbanks is not new to the IT world and has a wide range of IT expertise under her belt. Most recently, she was the acting CIO for NASA’s Goddard Space Flight Center. She has a combination of degrees which include a PhD and MES in computer science and a BA in mathematics and education. She finds the combination of degrees to be beneficial to her position.

She began her career teaching at Loyola College in Baltimore, and then moved to Goucher College and Towson University both in Maryland, before teaching in the graduate program at University of Maryland, Baltimore County as

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**MAN-MADE LIGHTNING:** This lightning flash was generated at Florida’s International Center for lightning Research and Testing and used by LLNL and University of Florida scientists to analyze a new lightning measurement technique.

# Livermore Lab Researchers Study Lightning In Florida

(Photo page 1)

Lawrence Livermore National Laboratory scientists are working with University of Florida researchers to study lightning in order to find new ways to protect buildings and other structures from the searing bolts.

Working with man-made lightning generated at the International Center for Lightning Research and Testing at Camp Blanding, Fla., the researchers are testing a new lightning measurement system developed by British researchers. The American scientists are trying to determine the limitations of the system, which calculates the simple peak electrical current flowing through a conductor.

Lightning naturally occurs when rapidly rising air in a thunderstorm interacts with rapidly falling air to create separately positive and negative charge areas within a cloud. Once the downward negative charges meet up with the upward positive charges, a continuous path between the cloud and ground is formed where the charge is dumped to create sparks (lightning).

At the Florida testing center, lightning is triggered by shooting a rocket trailing a grounded wire at an overhead thundercloud. These experiments can be routinely performed and the current of the resulting lightning measured. Lightning temperatures can exceed 50,000 degree Fahrenheit.

# Nations Gather To Help Nuclear Cities Shut Down Remaining Plutonium Production Reactors

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our joint efforts to shut down these deteriorating reactors and provide replacement facilities for the two closed cities and their inhabitants.”

The reactors also provide necessary heat and electricity to two

Federation proposed projects to the assembled countries that require international funding and participation. The proposed projects will help to protect and remediate environment around the



**INTERNATIONAL CONFERENCE:** Principal Deputy Administrator Jerry Paul (front row, fifth from left) poses with international participants in an “historic call” for global nonproliferation objectives.

“closed cities” in Siberia. In order to meet these energy requirements, the United States will provide support to the Russian Federation to significantly refurbish a replacement fossil energy plant at Seversk and construct a replacement fossil energy plant at Zheleznogorsk. The Russian government has agreed to permanently shut down the reactors once the replacement facilities are operational.

The EWGPP Program is taking the lead in this important nonproliferation effort of the Bush administration. It works to halt the production of new weapons-grade plutonium in Russia.

The goal of the conference was to solicit international funding for projects outside of the existing U.S.-Russia construction agreement. The Russian

reactor sites, and create new business enterprises and jobs for the workforce of highly skilled scientists and technicians that will be displaced when the reactors shut down.

Switzerland hosted the event at the Spiez Laboratory, an official Swiss institution dealing with nuclear, biological, and chemical defense matters. The Swiss Federal Department of Foreign Affairs’ Centre for International Security Policy was the primary sponsor of the event, which was attended by 11 countries, the European Commission (EC) and the International Atomic Energy Agency (IAEA).

# Kansas City Plant Cuts Costs, Improves Quality of Chemical Baths With New Monitoring System

Chemical plating tanks are used for several products and processes at the NNSA's Kansas City Plant. They deposit thin layers of gold, copper, or chromium on printed wiring boards. They also coat large weapon casings and small parts like pins and contacts.

The Kansas City Plant maintains high levels of quality and consistency in its tanks to ensure that parts meet stringent performance guidelines, but the challenge is knowing precisely how and when to adjust the tanks. If the chemical bath is changed unnecessarily, it wastes money and increases hazardous waste. If the proper mix is not maintained, it can affect product quality.

A Six Sigma team took on the challenge of developing a better way to maintain chemical baths. The group – composed of chemists, process engineers, technologists, platers and programmers – developed Labtrax, a system that tracks the operating conditions of plating tanks and uses

mathematical models to control the chemical concentrations and reduce waste in that process.

The program led to more than \$80,000 in cost savings in less than a



**KANSAS CITY PLANT MONITORING:** Senior engineering technologist Dan Williams analyzes a solution sample from a plating tank.

year.

Principal engineer Steve Brooks, Ph.D., did the programming for Labtrax, as well as for AutoCalc, a module that works with Labtrax to dramatically reduce the time required to perform solutions analysis. Brooks

created a mathematical algorithm that calculates what action should be taken to keep tanks adjusted.

Before AutoCalc, calculations were performed manually, which is slower and leaves the door open to the possibility of error. AutoCalc performs the calculations and provides the adjustments needed to maintain the tank's solution concentration and volume.

The next stage for Labtrax is a performance-based scheduling function that will further streamline and improve the program's reliability. Performance-based scheduling would base the testing of parameters on the previous history.

Preliminary work has shown that selected tanks which have been analyzed weekly can be moved to an analysis schedule of once every three months. This change would result in a cost savings and a high quality process control capability, ensuring that the plating tanks are always at peak operating levels.

## Jerry Paul Appoints Two New Staff Members

Principal Deputy Administrator Jerry Paul has appointed two senior advisors to his staff. Kim Davis and Lawrence Pace will support Paul on a wide variety of engineering, technical, policy, planning, and oversight issues. Davis will support Paul's focus on improving NNSA's responsiveness to the Defense Nuclear Facilities Safety Board (DNFSB). She previously worked for the departmental representative to the DNFSB, where

she performed engineering and technical liaison duties between DOE and the Board. Prior to that she worked at the NNSA Pantex Site Office and the Savannah River Site. Kim has also worked on Capitol Hill as a technical advisor to a member of Congress.

Pace will focus on improving NNSA's responsiveness to various departmental and stakeholder inquiries. A headquarters staff

member since 2002, Pace has worked in the NA-50 (Environmental Safety & Health - ESH) Site Liaison Office and in the NA-65 Office of the Chief Information Officer as the nuclear material accountability e-government project manager. Prior to that he worked at the former Albuquerque Operations Office in New Mexico and at the former Pinellas Area Office in Florida.

# India Agrees To Partner With Regional Radiological Security Effort of NNSA, IAEA

In a trilateral meeting with NNSA and IAEA officials on February 9 in New Delhi, the government of India agreed to be a partner within the Regional Radiological Security Partnership (RRSP). The RRSP is intended to complement NNSA's global work on radiological security, which is part of the Global Threat Reduction Initiative (GTRI). The mission of GTRI is to identify, secure, recover and/or facilitate the disposition of high-risk vulnerable nuclear and radiological materials around the world that pose a threat to the United States and the international community.

The RRSP is structured to allow the U.S. and the IAEA to jointly work with a country in a specific region as a "regional partner" to jointly promote or support key issues to improve the security of radioactive sources in that region. Areas of cooperation with a regional partner may include the conduct of regional training,

cooperating in regulatory development and other long-term infrastructure related activities, and search and recovery operations for high-risk radioactive sources. Last year, a very active regional radiological security partnership was established with Australia, which is now working in partnership with NNSA and Southeast Asian countries on improving regulatory infrastructure. Planning is underway to establish similar regional partnerships with Brazil and Argentina.

During the trilateral meeting, all partners acknowledged a shared objective to globally enhance the security of high-risk radioactive sources. India has offered to provide infrastructure and expertise on a regular basis for conducting training courses in India in coordination with the IAEA and supported by NNSA. The courses will focus on issues

related to the security of radioactive sources and materials. India also offered to assist with locating orphan radioactive sources in countries that are unable to effectively handle them.

India proposed that the IAEA's Department of Nuclear Safety and Security host a working-level meeting in Vienna with the India Department of Atomic Energy and NNSA's Office of Global Radiological Threat Reduction in April 2005 to develop a plan for these and other related activities.

Ed McGinnis, Acting Director of the NNSA Office of Global Radiological Threat Reduction, led the discussions on behalf of NNSA. In addition to IAEA officials, India's Ministry of External Affairs hosted the meeting. The Department of Atomic Energy and the Atomic Energy Regulatory Board were also represented.

## Wilbanks Is New CIO

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an adjunct professor. She still guest lectures on computer science topics. She became interested in the government side of IT after receiving a faculty fellowship from NASA.

Currently, she is traveling to offices in the NNSA complex and meeting with NNSA employees to gain a greater understanding and appreciation of the NNSA mission. Commenting on her visits to the sites she said, "I have been amazed by the quality people in the NNSA workforce, they really make NNSA the outstanding organization that it is, everyone has been so helpful."

The NNSA chief information officer will have three deputies in cyber security, planning/budget and operations/project management.

Dr. Wilbanks said, "my e-mail is always open and I am always looking to improve and hear ideas, concerns or suggestions with regards to IT at NNSA."



**NEW CIO:** Dr. Linda Wilbanks (center) meets at the NNSA Service Center in Albuquerque with Director Karen Boardman and Deputy Director Frank Baca.

# Service Center Staffer Wins Employee of The Year Award From Careers And The Disabled Magazine

“It’s been a blessing, not a disappointment,” Mike Perez said about his paraplegia, which resulted from a 1987 automobile accident while he was a student at the University of New Mexico.

“I’m a lucky guy,” he said. “I’ve seen and experienced things and met people who I would not have met without my disability. By fate we create a path in life that leads from A to B. My path has put me in a position to help improve life for other people with disabilities.”

On April 7 at a New York City event, Mike will receive the Employee of the Year Award from *Careers and the Disabled Magazine*, which gives the citation annually to individuals with disabilities who have made a difference in the American workplace. He will also be profiled in the magazine’s annual Expo Edition.

Mike has worked for the Department of Energy and NNSA for the last ten years. During that time he has rotated through several positions within the Environmental Management Program, Office of National Defense Programs, and Office of Business Services managing project control and project management activities. He currently manages and administers all of the acquisition related electronic systems for the NNSA Service Center in Albuquerque.

Jim Schneider, editor of *Careers and the Disabled Magazine*, said NNSA was invited to nominate a candidate for the award because it is a progressive employer that recruits,

hires and promotes people with disabilities.

Christine Gibson, Perez’s supervisor at the Service Center, nominated him for the award. She said Perez has been an advocate for employing, promoting and retaining employees with disabilities.

Some of the activities he has been involved with include recruiting college and high school students at career fairs; awarding scholarships on behalf of NNSA; and improving accessibility within the agency and on Kirtland Air Force Base where the Service Center is a tenant.

On his own, Perez has established a \$1000 college scholarship through the Albuquerque Public Schools Foundation for graduates who have physical, mental and learning disabilities. Called “Achieving Success,” the scholarship is focused on helping students who have overcome hardships.

He said students with disabilities may not think of themselves as college

material or capable of pursuing professional careers. Receiving a scholarship, he said, may just give them the boost they need to find

success in their lives.

“I’ve learned over the years that you have to maintain a positive attitude while you’re pushing for improvements,” he said. “You have to be consistent and you have to provide alternative strategies and solutions rather than simply demand changes.”

Perez’s

formal involvement as an advocate for persons with disabilities began soon after the car accident when he became a member of the University of New Mexico president’s committee for students with disabilities. The first week he went to work for DOE he was invited to a meeting of a committee for people with disabilities and took on committee responsibilities right away.

“I know people look to me for answers and information about disability issues,” he says. “When you live it and see it everyday, you understand where the problems are and you think about ways to solve them.”



**EMPLOYEE OF THE YEAR:** Mike Perez talks to his supervisor Christine Gibson outside the NNSA Service Center contracts building in Albuquerque.

# Sandia Designed System Has Ability To Destroy Biological Agents And Chemical Warfare Materials

Researchers at Sandia National Laboratories that created of the Army's Explosive Destruction System (EDS), first suspected the system could not only snuff out chemical warfare material, but treat and destroy biohazards such as those containing anthrax. Such a system could give homeland security personnel a tool for safely neutralizing a dormant terrorist device, or it could be used by the military to remove a land mine or canister shell without having to set off an open-air explosion.

A Sandia study confirms EDS's effectiveness against biological agents, bio-contaminated containers and improvised biological devices. Sandia

sponsored the study itself, spending \$60K in Laboratory-Directed Research and Development (LDRD) funds over the past year to confirm the capability. The report augments the system's already established capability to destroy explosively configured munitions containing chemical agents.

"There's high value in extending the EDS' successful track record into other areas - and bio came to mind right away," said Mary Clare Stoddard, a Sandia manager overseeing the research activity in Livermore, Calif. With the BioEDS project, said Stoddard, Sandia's goal was to generate the data to confirm

that this already-robust technology could be readily adapted to destroy a bioagent. Now, noted Stoddard, "that means that should the need arise, a solution stands ready."

First delivered to the U.S. Army in 1998 and under the sponsorship of the U.S. Army Non-Stockpile Chemical Materiel Project, the EDS is a proven, transportable system that has safely neutralized and discarded recovered chemical warfare material in an environmentally sound manner. It was originally conceived for use with World War I and World War II vintage chemical warfare materials.

## STRATCOM General Visits OST's Western Command At Sandia

General James E. Cartwright, commander of the United States Strategic Command, recently toured the NNSA Office of Secure Transportation Western Command Facility located at Sandia National Laboratories on Kirtland Air Force Base in Albuquerque. It was an orientation visit for the General, who also toured Sandia facilities.

The Strategic Command, or USSTRATCOM, is headquartered at Offutt Air Force Base, Nebraska, and is one of nine U.S. unified commands under the Department of Defense. USSTRATCOM is the command and control center for U.S. strategic forces and controls military space operations, strategic warning and intelligence assessments.



**STRATCOM MEETS OST:** USSTRATCOM Commander James Cartwright poses in front of an Office of Secure Transportation Safeguards Transporter with Bill Gould, chief of the OST Vehicle Systems Branch.

## Major Construction Completed At SRS Tritium Extraction Facility

The Savannah River Site recognized the completion of construction of the Tritium Extraction Facility's (TEF) major process systems at a January ceremony.

Brig. Gen. Ronald J. Haeckel, principal deputy administrator for defense programs for the National Nuclear Security Administration (NNSA), led the observance.

The \$506 million project, a key part of the supply system for the nation's nuclear weapons stockpile, is forecast to start operations about ten months ahead of the baseline schedule. The facility will be used to extract tritium (a radioactive form of hydrogen) from materials irradiated in Tennessee Valley Authority commercial nuclear reactors. Tritium is essential for modern nuclear weapons but it decays rapidly and must be replenished.

"We are very proud of TEF's early construction completion. We will now move into 20 months of start-up testing and readiness assessments," said Chuck Spencer, Westinghouse Savannah River Company's manager of defense programs. "The construction was not only completed early, but more importantly, it was completed safely. We look forward to the start of hydrogen testing in April, and commissioning the facility in 2006. Our critical ability to re-supply the nation's tritium will then be restored."

"There are many challenges ahead," said Gen. Haeckel, "in getting this unique operation running, but we're confident of success. We're grateful for the excellent performance of the construction



**SAVANNAH RIVER SITE TEF :** Alan Busby, Westinghouse Savannah River Company Defense Program Engineering, shows Brig. Gen. Ronald J. Haeckel, principal deputy administrator for defense programs for the NNSA, simulated TPBARs in the extraction basket in the Target Rod Prep module.

forces in safely providing a top-quality product."

About 90 percent of the facility's systems have been turned over for startup testing, the next step toward completion of the project.

A U.S. flag, the DOE flag and a facility banner were raised in commemoration of the event by SRS employees recently back from reserve duty in Iraq.

## Five Los Alamos Physicists Receive Honors

The American Physical Society has honored four Los Alamos National Laboratory physicists for their outstanding contributions to physics, naming them fellows of the society. Additionally, physicist Wojciech H. Zurek of the laboratory's Theoretical Division was named a Phi Beta Kappa Visiting Scholar for 2004-05

Steve Elliot, David Montgomery, David Moore and John Singleton were among 201 scientists nationwide elected as American Physical Society fellows in 2004.

"This achievement is something of which the laboratory can be very proud," said Tom Bowles, chief science officer, in congratulating the quartet. "I'm particularly pleased that their peers have chosen to recognize Steve, David, David and John in this manner. The range of scientific contributions made by these four scientists admirably reflects the importance that the laboratory associates with having a broad science basis that supports the nation's needs."

Established in 1776, Phi Beta Kappa is the nation's oldest and largest academic honor society. The Visiting Scholar Program that Zurek was named to serves to enrich the intellectual atmosphere at participating institutions.

"I am delighted with the award, excited about the prospect of interacting with the students and faculty and honored to join the distinguished company of the other Phi Beta Kappa scholars," said Zurek.

# Los Alamos National Laboratory Completes Phase I of Security And Safeguards Upgrades

A ribbon cutting at Los Alamos National Laboratory (LANL) in February celebrated the completion of Phase I of the Nuclear Materials Safeguards and Security Upgrades Project. The project involved improving and expanding security at key laboratory locations such as Technical Area (TA) 55, the plutonium facility.

The program finished almost a year ahead of schedule and under budget. The six-year, \$74 million Phase I project involved updating three key components of the institutional physical security system: the automated central security control system, communications system and alarm station facilities. The project was accomplished without a reportable incident or lost workday with more than 500,000 hours worked, including construction.

“These improvements help protect the people and materials that in turn protect America,” said Scott Gibbs, acting associate director for the Security and Facility Operations (SFO).

The centerpiece of the project was the replacement of the existing security control system with Argus.

“The most important security assets at the laboratory are now monitored and controlled by Argus, which provides more powerful capabilities that will be

security said at the ceremony. “We experienced good synergy between the University of California, the laboratory and the site office and look forward to the same success in Phase II.”

Added Jack Killeen, acting Security and Safeguards (S) Division leader, “We are involved in a much more subtle war on terrorism. The completion of Phase I is vital to protecting important assets and puts us a leg up on enhancing security. It was a real team effort with S Division, Protection Technology Los Alamos personnel, the Project Management (PM) Division and Los Alamos Site Office.”

Los Alamos joins four other Department of Energy sites that have deployed Argus as the NNSA standard security system.

Additionally, the TA-55 communications center is now 100 percent operable on fiber optic lines, instead of using the old copper wire network. The work involved installing cables along Pajarito Road, Diamond Drive and Mercury Road, as well as new ducts and conduits within key facilities.



**PHASE ONE COMPLETION :** Cheryl Stone cuts the ribbon at a ceremony marking the completion of phase one of the LANL Nuclear Materials Safeguard and Security Upgrades Project. Stone is the NNSA deputy associate administrator for the Office of Defense Nuclear Security. Next to Stone is Scott Gibbs of LANL’s Security and Facility Operations. Also shown left are Jack Killeen, acting Security and Safeguards (S) Division leader, and Herman LeDoux of the Los Alamos Site Office.

key to meeting the revised design basis threat,” Gibbs said.

“We would like to extend our congratulations on a successful completion,” Cheryl Stone, National Nuclear Security Administration (NNSA) deputy associate administrator for defense nuclear

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